

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 9-24 are pending in the present application, Claims 9, 12, 15, 16, 17, 20, 23, and 24 having been amended. Support for the amendments to Claims 9, 12, 15, 16, 17, 20, 23, and 24 is believed to be self-evident from the originally filed disclosure. Applicants respectfully submit that no new matter is added.

In the outstanding Office Action, Claims 12, 15, 20, and 23 were objected to; Claim 24 was rejected under 35 U.S.C. §112, second paragraph; Claims 9, 11, 12, 16, 17, 19, 20, and 24 were rejected under 35 U.S.C. §103(a) as unpatentable over Asher (U.S. Patent No. 5,159,159) in view of Eckert (U.S. Patent No. 3,806,912); Claims 10 and 18 were rejected under 35 U.S.C. §103(a) as unpatentable over Asher in view of Eckert, and further in view of Buchana (U.S. Patent No. 5,543,589); and Claims 13-15 and 21-23 were rejected under 35 U.S.C. §103(a) as unpatentable over Asher in view of Eckert, and further in view of Kakuhashi (U.S. Patent No. 4,517,546).

With respect to the objection to Claims 12, 15, 20, and 23, these claims are amended to correct the minor informality noted in the outstanding Office Action. Accordingly, the objection to Claims 12, 15, 20, and 23 should be withdrawn.

With respect to the rejection of Claim 24 under 35 U.S.C. §112, second paragraph, Claim 24 is amended to provide an antecedent basis for “said active surface” and “said first and second terminals.” Accordingly, Applicants respectfully submit that this ground of rejection is overcome.

With respect to the rejection of Claim 1 as unpatentable over Asher and Eckert, Applicants respectfully traverse this ground of rejection. Claim 1 recites, *inter alia*,

a plurality of electrical conductors connected to the first ohmic resistor at discrete points thereon and said electrical conductors extending from the first ohmic resistor within the active surface; and

a plurality of conducting elements *arranged, within said active surface, so as to alternate between said electrical conductors, a first end of said conducting elements being connected to a third terminal of said position detection device;*

wherein *said conducting elements are configured as an ohmic resistor extending over the active surface of the device and a second end of said conducting elements is connected to a fourth terminal of said position detection device.*

Asher and Eckert, taken alone or in proper combination, do not disclose or suggest all of the above-noted elements of Claim 1.

Asher describes a touch sensor comprising two insulating substrates 28 and 29, which are arranged one above the other.¹ A fixed resistor is arranged on each of the substrates for generating a potential graduate along one specific direction of the area to be sensed. Finally, a force sensitive resistor 42 is arranged between the substrates that changes its local resistance as a function of the pressure applied.

The general configuration of the touch sensor is described in “Summary of the Invention” section in col. 4, lines 43-52 of Asher. This section of Asher states,

the touch sensor of the present invention comprises *a lower, or X, substrate*; an X fixed resistor which establishes a potential gradient along an X dimension relative to the X substrate; two X terminals connected to the X fixed resistor; *an upper, or Y substrate*; a Y fixed resistor which establishes a potential gradient along a Y dimension relative to the Y substrate; two Y terminals connected to the Y fixed resistor; and a force variable resistor sandwiched between the upper (Y) and lower (X) substrates.

¹ Asher, Abstract and Fig. 12.

When a finger or stylus presses on the upper substrate of the touch sensor of Asher, the local resistance of the force variable resistor under the touch point decreases as a function of the applied pressure. The touch point also temporarily divides the X fixed resistor into two segments, and similarly divides the Y fixed resistor into two segments; the fixed resistor segments forming electrical nodes with the force variable resistor.² The position of the finger or stylus on the surface of the touch sensor can be determined by measuring the resistance of the fixed resistor segments, and the pressure can be determined by measuring the resistance of the force variable resistor.³

Figs. 1 and 2 of Asher describe one embodiment of a touch sensor, in which conductive traces 30 and 31 extend from the respective fixed resistors 32 and 33 across the active area of the touch sensor. In Figs. 1 and 2 of Asher, the sensor is represented in its unassembled or unfolded condition. To assemble the touch sensor, the substrate has to be folded in half along the dotted line 22, so that the X conductive traces 31 ***overlap, are oriented orthogonally to, and are facing the Y conductive traces 30.***⁴ Asher thus describes a sensor, in which the X conductive traces and the Y conductive traces are not only oriented orthogonally to each other, but they are also arranged in two different planes (one above the other).

Thus, Asher does not disclose or suggest the claimed “a plurality of conducting elements ***arranged, within said active surface, so as to alternate between said electrical conductors***” as is recited in Claim 9.

Asher also fails to disclose or suggest the claimed “said conducting elements are configured as an ohmic resistor extending over the active surface of the device,” as recited in

² Asher, col. 4, lines 53-61.

³ Asher, col. 4, line 66 to col. 5, line 2.

⁴ Asher, col. 8, lines 51-54.

Claim 9. It is noted that such a configuration advantageously enables the creation of a potential gradient across the conductive elements.

The conductive elements identified by the last paragraph on page 3 of the outstanding Office Action include conductive traces 30, which extend from the fixed resistor 32 across the active area of the touch sensor. The conductive traces are made from an electrically conductive ink or from a thin metallic film.⁵ The conductive element is therefore electrically conductive so that if a voltage is applied to the conductive trace via the fixed resistor, the conductive trace will be at the same electrical potential across its entire length. The fact that force sensitive resistor traces 40 are applied on top of the conductive trace 30 does not change this behavior. Thus, the conductive elements described by Asher cannot be interpreted as being “*configured as an ohmic resistor extending over the active surface of the device.*”

Thus, Asher does not disclose or suggest the claimed “said conducting elements are configured as an ohmic resistor extending over the active surface of the device.”

Asher also fails to disclose or suggest the claimed “a first end of said conducting elements is connected to a third terminal of said position detection device” and “a second end of said conducting elements is connected to a fourth terminal of said position detection device,” as recited in Claim 9.

The conductive traces 30 of the Asher touch sensor are connected at their first end to the fixed resistor 32, and via this fixed resistor 32 to the terminals 12 and 13 of the touch sensor. However, as is shown by Figs. 1 and 2 of Asher, *the second end of the conductive traces 30 is free and is not connected to any terminal or other part of the touch sensor.* Thus, Asher describes conductive elements, wherein only a first end is connected to a terminal of the touch sensor, while the other end is unconnected.

⁵ Asher, col. 7, lines 61-66.

Thus, Asher does not disclose or suggest the claimed “a first end of said conducting elements is connected to a third terminal of said position detection device” and “a second end of said conducting elements is connected to a fourth terminal of said position detection device.”

Furthermore, Eckert does not cure the above-noted deficiencies in Asher.

Eckert describes a graphical input board including a fixed resistor 16 extending along an active area of the input board and a plurality of conductive paths 14 extending from the resistor 16 across the active area. In contrast to the claimed invention, only one end of the fixed resistor of Eckert is connected to some part of a detection circuit (contrast with the claimed “said first ohmic resistor connected between first and second terminals of said position detection device”).

Furthermore, Eckert describes a plurality of resistive paths 20 arranged with the active surface so as to alternate between the conductive paths 14. A first end of the resistive paths 20 is connected via conductive path 18 to some part of a detection circuit. The second end of the resistive paths 20 is free, which means that it is not connected to a terminal or to a detection circuit. Thus, Eckert also does not disclose or suggest the claimed “a first end of said conducting elements is connected to a third terminal of said position detection device” and “a second end of said conducting elements is connected to a fourth terminal of said position detection device.”

In view of the above-noted distinctions, Applicants respectfully submit that the outstanding Office Action has not established a *prima facie* case of obviousness, and that a person of ordinary skill in the art could not properly combine Asher and Eckert to arrive at the invention defined by Claim 9.

Accordingly, Applicants respectfully submit that Claim 9 (and any claims dependent thereon) patentably distinguish over Asher and Eckert, taken alone or in proper combination.

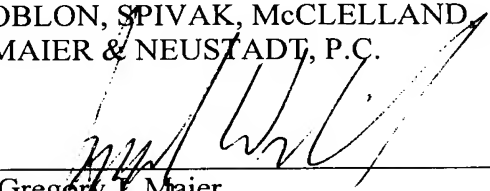
Claims 16, 17, and 24 recite elements similar to those of Claim 9. Applicants respectfully submit that Claims 16, 17, and 24 (and any claims dependent thereon) patentably distinguish over Asher and Eckert, taken alone or in proper combination, for at least the reasons stated for Claim 9.

Addressing each of the further rejections, each of the further rejections is also traversed by the present response as no teachings in any of the further cited references to Buchana and Kakuhashi can overcome the above-noted deficiencies of Asher and Eckert. Accordingly, it is respectfully requested that those rejections be withdrawn for similar reasons as discussed above.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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